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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,598	10/10/2003	Johan Hulten	00173.0043.PCUS00	2597

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EXAMINER

BUTLER, DOUGLAS C

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/605,598

Applicant(s)

HULTEN ET AL.

Examiner

Douglas C. Butler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-2 and 5-12 are pending with claims 3-4 canceled.

3. In claim 5, line 2 "25" should be deleted.

4. Note the attached Form PTO-892 which lists the printed U.S. patent application corresponding to the instant application.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2 and 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daghighi et al (5568846) in view of Tasker et al (5855416) further in view of Cooper et al (WO 99/19525) and Wirth (DE 4133593) or Kappich (DE 19507102) and the two Math Forum articles.

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The claims are directed to, inter alia, essentially the ratio between the radius of a brake rotor and the radial extent or length of a braking lining for a disk brake.

It would have been obvious to modify the disk brake of Dagb et al to be used with heavy vehicles having an axle pressure between 6 and 14 tons, or whatever, desired as taught by Tasker et al column 5, line 60 to column 6, line 7 in that the particular load or pressure at the axles is typical for heavy truck and is based upon the load that ~~the~~ <sup>the</sup> artisan intends to carry. As to the material of the disk brake rotor being "cast iron alloy", it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the material as per Cooper since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Re the particular recognition by applicant that correlating the ratio between the brake lining extent or length and the radius of the brake rotor is significant, each one of the references to Wirth and Kappich recognizes the relationship and its significance. See MPEP 2144.05 under the heading "Only Result-Effective Variables Can Be Optimized". It appears that the ratio is a result-effective variable which when optimized achieves a desired result of at least reduced vibration or resonance. It would have been obvious to modify Dagb et al as modified by routine experimentation to optimize the ratio of B/R as per Wirth or Kappich, the brake torque, modulus of elasticity and any variety of parameters typically known, calculated or estimated by a brake artisan to

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arrive at the most suitable disc brake for the environment and application at hand with reduced vibration.

See MPEP 2144.05 under "Optimization". Also, see MPEP 2144.04 under "Changes in Size/Proportion".

The instant specification describes a series of tests and observations but fails to present any statement or evidence that the claimed selections are critical. Note that the radial extent of the brake lining is a function of the arc or circumferential extent which is taught by Wirth and Kappich and as supported by the Math Forum @ Drexel articles (pages 1-10, 1-3).

7. Applicants' arguments in the amendment filed Sept. 30, 2004 have been considered but are not convincing for the above reasons. The claims are directed to a disk brake wherein the "ratio  $B/R$  between the radial extent  $B$  of the lining (32) and the radius  $R$  of the rotor (8) is less than 0.38". As stated above, one having ordinary skill in the art through routine experimentation would select any variety of ratios based upon the type of rotor, brake pad, etc. in order to arrive at the optimum ratio.


8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication should be directed to Exmr Butler at telephone number (703) 308-2575.

  
DOUGLAS C. BUTLER  
PRIMARY EXAMINER  
12/11/04  
AU 3683

Butler/vs  
December 8, 2004